Docket No.: 27617-00003-US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Masahiko Matsukawa et al.

Application No.: 10/743,387 Confirmation No.: 7938

Filed: December 23, 2003 Art Unit: 1742

For: PRETREATMENT METHOD FOR COATING Examiner: L. L. Zheng

Declaration Under 37 CFR § 1.132

We, Masahiko Matsukawa, Toshiaki Shimakura and Masanobu Futsuhara declare that we are inventors of the invention disclosed and claimed in the above identified US Patent application and are employed by Nippon Paint Co., Ltd. and we further declare:

1) We have reviewed the Office Action in this application dated March 4, 2010 and the references cited therein.

2) According to the present invention, since a chemical conversion treatment agent is used, a coating film is formed by a chemical reaction, whereby a drying step for forming the coating film is not required, and washing with water immediately after the treatment is permitted (please see page 2, line 29 to page 3, line 2 and page 5, lines 15-28 of the specification).

3) With respect to the mechanism by which the chemical conversion treatment agent used in the present invention enables the formation of such a chemical conversion coating film, the chemical conversion treatment agent first dissolves the surface of the metal (base material) which is a target of the treatment, and then metal ions eluted into the chemical conversion treatment agent through a dissolution reaction extract fluorine atoms from ZrF_6^{2-} included in the chemical conversion treatment agent and concurrently therewith the pH around the surface of

the metal (base material) increases, whereby an inorganic-organic composite including an amino group-containing silane coupling agent and Zr is generated as a deposit on the surface of the base material.

4) In brief, the chemical conversion treatment agent used in the present invention is a reaction type treatment agent that enables a chemical conversion coating film to be formed by chemically reacting with the surface of the metal.

5) The invention disclosed in US Patent Application Publication 2001/0037748 to Shimakura et al. relates to a **coating type** metal surface treatment agent which enables film formation of non-volatile components by heating/drying.

6) The metal surface treatment agent of Shimakura et al. does not necessitate the dissolution of the metal surface in forming the coating film, contrary to the chemical conversion treatment agent of the present invention that necessitates the dissolution of the metal surface in forming the chemical conversion coating film.

7) It is apparent to persons skilled in the art that such a surface treatment agent of Shimakura et al. is distinct from the chemical conversion treatment agent.

8) The surface treatment agent disclosed in US Patent 6,180,177 to Nagashima is a **coating type** metal surface treatment agent which enables a coating film to be formed by applying the agent on the surface of a metal material, and thereafter drying (please see column 11, lines 35-44 of Nagashima).

9) Such a coating type surface treatment agent as in Nagashima, distinct from the chemical conversion treatment agent, cannot be washed until the drying step is completed. That is, the coating type surface treatment maintains water solubility on the metal base material until the agent is dried to form a coating film, contrary to the

chemical conversion treatment agent which immediately forms, by way of a chemical reaction, a coating film having corrosion resistance on the metal surface.

10) The surface treatment agent disclosed in Nagashima dissolves the metal surface by an acid component contained in the surface treatment agent. However, the dissolution is carried out so as to allow metal ions eluted from the metal surface to react with a water soluble polymer, whereby **a hard-to-dissolve resin coating film is deposited on the metal surface** (please see column 8, lines 16-28 of Nagashima). Thus, according to the surface treatment agent disclosed in Nagashima, the metal ions eluted from the metal surface are used for insolubilizing the water soluble resin contained in the surface treatment agent by salt precipitation.

11) To the contrary, it is apparent for persons skilled in the art that the coating film deposited by the chemical conversion treatment agent is not a resin coating film. Therefore, it is apparent for persons skilled in the art that the surface treatment agent disclosed in Nagashima does not correspond to a chemical conversion treatment agent.

All statements made herein of our own knowledge are true. All statements made on information and belief are believed to be true. These statements were made with the knowledge that willful false statements and the like so made are punishable by fine, imprisonment, or both, under 18 U.S.C. 1001 and may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

Date:
September . 2 . 2010.

Masahiko Matsukawa
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Date:
September, 2, 2010

Toshiaki Shimakura
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